I'm one of those robot guys

that were standing
in line in 1977

waiting to go
in to see Star Wars

and saw R2 D2
for the first time.

I'm convinced
that at that point I was hooked.

There was a desire to want

to figure out
how can I be involved,

how can I work with robots.

[music]

The year is 2003, NASA sends
two exploration rovers to Mars.

The objective, to research

and understand

the planet's properties.

The mission concluded
when the final rover

became inactive in 2018.

Amazing what we can achieve
with technology,

whether up in space or down here
on Earth, computers,

mobile phones,
even robots themselves.

These achievements have helped
streamline day-to-day tasks,

especially in the workforce.

Now, automation
and robotics are commonplace

in supply chain environments,

but what does that mean
for these facilities?

How are jobs
in that space changing?

We're about to find out

on this episode
of Jobs of Tomorrow.

Autonomous robotics
are not a foreign concept.

Hop Culture alone
has had its eye

on robots for decades.

Optimus Prime, C3 PO,
Marvin The Paranoid Android,

we've always been interested
in robots and what they can do,

but what does the relationship
between humans

and robots look
like in the workplace?

Zebra Technologies' vice

President and Star Wars lover,

Jim Lawton,

can share his thoughts.

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for the first time.

I'm convinced

that at that point I was hooked.

There was a desire to want

to figure out

how can I be involved,

how can I work with the robots.

The technology

wasn't at the point back

then where it can do
what it can do today,

but it was really that desire
to want to leverage

technology and automation
and robotics to achieve things.

See, I wasn't lying when I said

we've always
been interested in robotics.

As I got older,
as I started to work

in supply chains
and look for opportunities,

really, the bringing together
of my passion for robots

with the desire to drive
business results,

and that's really what attracted
me to what I'm doing today.

It's this level of passion
that helps companies

utilize new technologies
in supply chains.

Just like Deloitte's very own

supply chain specialist
Wanda Johnson.

I love robotics and automation.

When I first started
out with automation,

it was nothing
where we're talking

about today with the AMRs,
we had the AGVs and all that.

AGVs walked so AMRs could run.

AGVs, Automated Guided
Vehicles are often used

in manufacturing
and warehouse environments

to transport materials

and equipment.

Now, AMRs, Autonomous

Mobile Robots, can move

around more freely

and collaborate

alongside humans.

Today,

taking what I used to know

in the past and now couple

that with

what I know today

and how you integrate

it all in together,

that robotics piece

is so important

that we don't forget

that the human is still there.

You have to take the human
into action with that robot.

The robot
may be bringing the product

to that end user,
but the end user

is now still working
side by side.

For decades,
people have feared the rise

of autonomous robots
and what could happen.

I guess we have the Terminator
to thank for that.

As Wanda stated,
understanding us humans

is key when designing robotics.

I don't know
if you've ever tried

lifting heavy boxes and moving

them around in a warehouse,
but it ain't easy.

That's where our robot
friends step in

to make the job
easier and faster.

It's also where we start to see
the latest tech trends like AI.

Some of the latest
trends are you see

more and more with the mobile
autonomy and AI in general.

Everybody's talking about AI,
AI, AI,

and the digitalization
and digital twins

and mobility, and robots.

Really, what you see is that

there are a lot of new tools
and a lot of new development

and research and capabilities

in each of those technology
spectrums

that are actually making
it cost-effective

to implement
where it can be sustainable.

Plus One Robotics COO,
Crystal Parrott,

has spent many years
in the industry.

Some could say she knows

a thing or two about
emerging technologies.

AI is moving more

from the information

technology sector

into the actual process
sector for picking and packing,

handling, autonomous mobile,
pattern recognition,

is becoming more powerful,
it's cheaper to use

and the processing
speeds are at such

that you can keep track and pace

of the rates that the throughput
is being driven.

Advancing the supply
chain industry

isn't just limited to robotics,

it's also emerging tech like AI
working in sync with automation.

To give you an example,

if the decision
is do we unload this truck

now or in 10 minutes or tomorrow

and artificial intelligence
will be able to help you

with highlighting
the relationship,

what if we do this

and then something else happens?

In that particular example,

what if there's another truck
waiting

in the back that's waiting
for the stuff that sits on this?

You might be thinking, Andre,
can AI predict the future?

Not yet, but AI can work
alongside robotics

and automation to organize,
learn, and optimize picking,

packing, and handling methods.

Now we just scratched
the surface

of artificial intelligence
use in industrial setting.

The adoption
will be a lot faster

than in a consumer setting.

What you're going to see
is a transition of yes,

not only can it identify
how to pick

and place specific items,

but it's going to
be able to detect

when things may be damaged,
when things may be opened,

how to handle different things
and flag that differently.

Oh, the applications
are dramatically improving

the process optimization

of the warehouse
and distribution.

[music]

All robots are made
with a purpose.

Since 1986,
Honda has been investing

in designing humanoid robots.

It wasn't until 2000
that they revealed

the extremely popular Asimo,

jam-packed with pattern
recognition technology,

enhanced mobility, and advanced
intelligence capabilities,

this little guy made
a huge difference

in so many applications.

So far we know
that our trusty robotic friends

can be a big help
during the picking

and packing process,

but what other roles
or purposes can they serve?

Primarily, what we're using
the AI for is to enable

the applications
to be able to do better parcel

handling and identification

as well as parcels

for mixed palletization.

We're using our AI profiles
to be able to better identify

where and what and how to pick.

With that, when we combine
it with a special gripper

and other components and robots,
we're able to provide

a full solution
that can actually induct

and handle parcels
and mixed pallets.

Robotics with the help
of AI programming

can be extremely useful
in identifying, picking,

and handling products throughout

an entire warehouse
or distribution center.

The tech can also speed
up the training

of our fellow human workers.

If you think of picking
within a warehouse, for example,

it's not uncommon
that for people

when they first start,
they're not super productive.

It can take a while that we use
heads-up displays, for example.

In the heads-up display,

you can see when you're doing
a pick the shelving,

you can see which shelf
you're picking from.

You can see which bin
you're picking from.

If you're working with
autonomous mobile robot,

you can turn
to the robot and you'll see

the shelving on the robot,

and you'll see
the particular bin

lighted up in your view

screen of where you're supposed
to place the pick.

It's much, much faster
for someone that's never picked

before to be able to quickly
see,

"That's what I need to pick,
here's how many I need to pick,

and here's where I need
to put them

when I'm done with the robot."

That allows people
to be productive

in hours instead of weeks.

This is one of many ways
autonomous robots

can flourish
in the supply chain arena.

Just think of how much
more efficient you would feel

with a robot counterpart
watching your back.

It's just like having
your own personal BB-8 unit.

You can enhance your performance
and amplify workplace success.

Oh, the applications
are dramatically improving

the process optimization

of the warehouse
and distribution.

Labor shortage is a problem,

and really trying
to have people engaged

and deal with the turnover

because it's not a job
that everybody wants to do.

Being able to pick
and place something

that a 1,000,
2,000 every hour every day

ergonomically and intellectually
it's just not that much fun.

I think as you move
through and do that,

a lot of the jobs
that are ergonomically

challenging where

you have to rotate

people in just to guarantee
their physical safety,

now you don't have to do that
because you can have them

supervising if you will,
the robotic applications

on the things
that it can do very well.

Many people tend to worry about
robots and other tech taking

over their jobs,
but in this future,

they actually help make jobs
better and more rewarding.

AI is great but you can't plan
for everything

that you're going to see

in a warehouse

or a distribution center.

They just have too much variety

and even the manufacturers
can't control

their product
quality after it's gone

through one or two resorting
facilities.

Our solution helps
with that by allowing

robotic picking
and placing to remove

some of the ergonomic issues
and the people labor issues.

Not that it's removing
them completely

from the operation,
but it's upskilling them

with the opportunity

to become robot supervisors,

crew chiefs if you will,

to be able to allow
for that continuous operation.

Robots' supervisors?

This just keeps getting
better and better.

While implementing robotics

in the workplace
can address labor issues,

it also creates much
more tech-forward jobs

in the supply chain,

just what the younger
generation is looking for.

I go back 20 years

because that's how long
I've been in this industry,

more than 20 years.

That time the workforce
was flowing

in and out of the warehouse.

You had enough people,

but now if you're still doing
the antiquated waves,

the people of the day,
this new generation,

they're looking at,
"Hey, I'm using an iPad,

I'm doing a touchscreen,
I'm doing all this,

now you want me
to walk and do all of this."

Now, how do I take that same
technology, upskill this person,

and actually put

them into a new role?

With new tech entering the fold,
employees

are going to have to learn
to work

alongside tech
in a collaborative way.

That means learning to operate,
maintain, and manage it too,

but how do those in the industry
feel

about new robotics
entering the workforce?

Many companies
have experienced technology

that doesn't necessarily deliver

on expectations
and so everybody's selling,

they're setting

high expectations.

In some cases,
people have had a lot

of bad experiences,

and so there's a certain amount
of skepticism.

People are sometimes jaded,
"Okay,

you're saying
this is what it's going to do,

but what's it
really going to do?"

When we see our customers

experience
what it was that we told

them they would achieve,
that excitement, that happiness,

that satisfaction with having

achieved an outcome
is worth gold.

It's that outcome that I love
seeing in our customers.

They embrace
the technology and it delivers

what they expected
it to or more.

They're not really taking
my job away.

They're actually
enhancing my job.

Now I'm taking you from--

I'm going to use
the example before,

you were a forklift driver

or you're a picker
and you walked 10 miles

or more a day

within that warehouse.

Now you are staying stationary,
but now you're doing research,

you're understanding
how to use the technology,

you're understanding
how to publish you,

before you were just
almost like, I hate to say it,

a robot,
you actually have a buy-in

to that new technology.

A lot of the people
that have been using

gaming in their teams will find

that they're really
well equipped

to be able to help
robots navigate.

Call me a robot enthusiast,

but I'm incredibly excited about

some tech efforts
in recent years.

If we can get even one step
closer to having real life [?],

I am all for it.

Are others as keen as I am?

I'm sure
that before the industry starts

rolling out the red carpet,

they're more than likely
going to look

at what other supply
chains have achieved.

Without further ado, let's look
at what goes into automating

an operation and cue

those success stories.

It's funny because when people

want to automate,

the first thing

they think about is,

what's the hardest

thing that we do here?

Let's automate that,

or the most complicated thing,

or that thing

where all the value

is being created.

In a lot of cases,

those are the harder

things to automate

and they do have greater risk,

but if you walk around

any logistics operation,
if you walk

around any manufacturing
operation,

you're going to see people
doing things that are dull,

that are boring,
and in some cases are dangerous,

but they're oftentimes
simple tasks.

It looks like replacing
mundane and time-consuming tasks

is a good place to start
when it comes to automation.

This way human expertise

can be better utilized
for higher-value tasks.

What other areas
can automation be of help?

[?] I worked with maybe
a couple of years ago,

they actually did
a retrofit of their facility,

and when they did that retrofit,
one thing for the end users

who have been in there

for like 10, 15 years

doing the same work
all the time,

it was hard
for them to transition

over to now that depalletization
and how they depalletized.

That client now,
not only on the front end

within the four walls
of the warehouse improved

their efficiency

of how many cartons

and cases of pallets

they can actually
build and load the truck,

but what really happened
was the back room of that store.

Now, that's a success story.

You got your pallet

that was actually built
so efficiently,

now when it gets to the store,

that person
can take that pallet,

direct it to an aisle,

and when they get
it to the aisle,

they don't have to walk
down three aisles

to actually stock the shelves.

Very specifically,

we're addressing
the labor shortage

for parcel induction
and depalletization.

In this particular industry,
it's so heavy labor intensive,

they just don't
have the resources

to be able to do that.

We're working on solutions
that are able to be low cost

and have the return
on investment

that cost the same as a person

but is more available
and repeatable.

These are just
some aspects of the industry

that are covered
by the rise of automation.

With many new practices finding
their homes in facilities,

how are employers making
jobs better for their workers?

What we have done
as industry providers

in the automation space

and the robotics space
is how can I design

the use
of the technology to match

well with
a lot of the capabilities

that people have and a lot

of the interests that they have.

One of the things
that we've done with autonomous

mobile robots is for them
to navigate around a facility,

they have to have their own map.

They have to understand
what's where.

To educate the robot

on what the environment
looks like,

you have to drive
it around and show it

what the environment
looks like and then it uses

all of its sensors
and perception to figure out

what that environment
looks like.

We've designed it to be used

with a controller
that looks just

like an Xbox
or a PlayStation controller,

and so a lot of the people
that have been using

gaming in their teams will find

that they're really
well equipped

to be able to help
robots navigate.

You're telling me
that I can finally put

my video game skills to use
in a real work environment?

Looks
like all those years I spent

playing Mario Kart
are about to pay off.

It's refreshing to see
that professionals are trying

to make the evolving industry

an accessible place
for generations old and new.

With that being said,

let's explore how we toggle
our way forward.

We're going to see
more and more tech that makes

it easier and easier
for people to use.

It's going to be able to be

lower and lower cost.

When I have my mobile phone,
it's got sensors in it,

we use a lot of those
same sensors and robotics.

We all as an industry
get to benefit

from the technology curves
that are happening as a result.

The other area
that's particularly exciting,

of course, now we're in the area
of ChatGPT and Bard,

and so the leveraging
of artificial intelligence

to allow robots
to operate more efficiently,

to allow them to help provide
more insights to people,

help people
do their jobs better,

I think we'll see
a lot of those technologies

be increasingly impactful
in commercial environments.

While you may think
the evolution of automation

and robotics in the supply
chain can't get any bigger,

you really need to think again.

What we are doing
is we have built

a smart factory
that's in Wichita, and we have

all of that technology
there and the innovation lab,

and now we are actually
intersecting that

to a smart warehouse
and building that out.

Now the client can actually,
or potential clients,

can actually walk

into the smart factory envision

and see the things that

they want to see in the future.

There isn't any one way

to do or layout

a system or a solution anymore.

You have many options,

and you really get to identify

what you want

to have done and then pick

the right technology

and the right type

of equipment

to be able to do that.

The more modular

you can make it,

the more opportunity

you have to make your operations
efficient

because you're not put

into any specific
technology profile.

The future of automation
and robotics

isn't the dystopian world
that we often see in movies.

It's full of promise
and possibilities,

and we haven't even scratched
the surface yet.

You can have anything from AI
software to a reliable team

of collaborative robots
at your command.

Sounds like a pre-rigged
career choice

if you're looking

for a tech-forward workplace.

Thanks for watching.

I'm your host, Kristin Marand,

and we'll see

you on the next episode

as we explore

the jobs of tomorrow.

[music]